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Nesting of the Wilson's Snipe in Western Washington, con't.

Disgusted and beaten, I turned homeward, my direction taking me past a large dairy barn and I could see a man inside milking the cows. As a last resort I turned back to make inquiries about the birds and found the owner to be Mr. W. T. Smith, a very enlightening gentleman who had lived for many years in the location and who not only gave me the information I desired but many other interesting notes on the birds of that locality.

It seems that two days previous, he with his son was driving through the field with a load of hay for the cows, when out flushed a snipe from under one of the front wheels. She gave a splendid exhibition of a wounded bird and the son took after her for several rods before she took flight. Mr. Smith, however, searched carefully for the nest and found the front wheel had passed over the eggs, breaking three of them, but did not injure the fourth which he saved. He very kindly gave it to me and it is now in my collection. "You will find a chick well started inside," he said, and this was confirmed later when the egg was blown.

He informed me that several pair of Wilson's Snipe had bred there for the past five years, but this was the first time he had found the nest.

On June 27, Mr. Bowles and I visited the field in hopes of finding the other female, but the day was very warm and bright and after a brief search we gave it up for the day and also for the season.

Before closing I might add that it was a beautiful sight to see the male "drop" at the end of his coursing around the field. On one occasion, at a distance of about one hundred yards from the ground he suddenly raised his wings above him, his head bent back so that his long bill was pointed straight up. In this position he "wafted" down like a blown leaf. In the fall of the year while shooting, I have often seen them drift down, but nothing like the spring exhibition during the mating season.

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NOTES ON THE CALIFORNIA GRAY SQUIRREL (Sciurus griseus griseus)

IN PIERCE COUNTY, WASHINGTON.

By J. Hooper Bowles.

The California Gray Squirrel, sometimes known as the Oregon Gray Squirrel, is one of the most abundant mammals in this section of the country. It has been a resident here ever since 1896, to my personal knowledge, and there is little doubt that they were here long before that date. They were by no means common in those days, which I believe was partly because they had no legal protection and very possibly because natural conditions were not as suitable for them as has more recently become the case. It is a common theory that they were introduced here, but it seems much more probable that they have always been here in limited numbers. Animals of such well known migratory propensities as the larger squirrels, would be likely to travel much longer distances in the course of time than from the State of Oregon, and would become permanent residents if food and other natural conditions were satisfactory.

These animals seem to be confined almost exclusively to what may be called the prairie districts, although they are steadily extending their range. This type of country was in former times undoubtedly devoid of any timber except the oak trees, strips of forest composed of the Douglas Fir (Pseudotsuga taxifolia) surrounding it and extending out into it like peninsulas. However, in recent times it has steadily been encroached upon by the fir trees,

Notes on the California Gray Squirrel in Pierce County. (Con't.)

which has resulted in the death of nearly all of the large oaks, and the same process is going on today. In several sections we also have the Western Yellow Pine (*Pinus ponderosa*), which seems to be slightly on the increase, not to mention numerous other deciduous and coniferous trees that have little connection with this paper. This type of country has comparatively little small undergrowth, such as sal-lal and ferns, and seems especially suitable to the Gray Squirrels. The line where the prairie country meets the mountain country is very abrupt, but is doubtful if any of these squirrels ever stray far over the line unless they find a suitable channel, a few instances of which have come to light.

I am uncertain just when the squirrels were given legal protection, probably about 1910, but the result has been an immense increase in their numbers. Up to that time it seems probable that their destruction of the fir trees, which in this section forms their main food supply, was little more than nominal, or I should almost certainly have noticed it. In a very short time, however, their work commenced to show itself with a yearly increasing evidence, until now the results are positively appalling. I believe it is a conservative estimate to say that nearly one half of the second and third growth fir trees are dead or dying as a result, and in many large groves practically all the trees are damaged beyond recall. Their method of attack is to girdle the tree of the hard outer bark in order to get the soft inner bark and soft wood underneath for food. I know this to be the case, having shot the squirrels at work and found the stomachs filled with the material above mentioned. Small trees are likely to have operations started close to the ground, when the girdling often continues clear to the top. In trees of from twenty-five to a hundred feet in height girdling usually commences about three quarters way up the tree, which in the larger trees is sometimes extended fifteen feet or more both up the tree and down. The first part of January is as early as I have seen them start work on the trees, which is continued into June, so that probably they operate only when the sap is running. Signs of their work at once become evident, as strips of bark from three to six inches long strew the ground, in many places looking as though a small planing mill had been there.

During the past four or five years the maple trees have been attacked in the same way and with the same results, but the only other trees I have seen attacked are the pines. The pines are also girdled, but besides that the ends of the upper branches are trimmed as skillfully as if done by an expert landscape gardener. This is done in only comparatively few trees, the work being done on the upper half of the trees and all the way around it. I am completely at a loss to understand the reason for this type of work, unless they may drink the sap that comes out of the stubs, but even this is unsatisfactory to me. The strength in their jaws is demonstrated here to a surprising extent, as I have in my collection a branch more than three-quarters of an inch in diameter that was nipped off at a single bite.

The nests are sometimes built in the cavity of a tree, but much more often the squirrels build a large nest of good-sized twigs in some large fir, making a heavy, roofed-over lining of dead grass and soft bark. These nests are often from two to three feet in diameter, and from below closely resemble the nest of a hawk or crow.

It is an interesting and very noteworthy fact that, although these animals are extremely numerous, we may walk for days in the country they inhabit and never see one, wherein they differ greatly from the gray squirrels of the eastern United States. Certainly they are much more timid than the eastern species, and for no apparent reason whatever, as they are not molested by man, and squirrel-eating hawks and owls are few and far between.

In studying the economic value of these squirrels to mankind, they must be considered very much in the negative. Many thousands of dollars worth of fir timber has already been destroyed by them, and, unless legal protection is removed from them, in a few years our beautiful fir-wooded prairies will look as though they had been swept by some great forest fire or blight.